

PATENT

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCE

APPLICANTS: R. MAYR ET AL EXAMINER: K. E. PETERSON
SERIAL NO.: 09/674,205 GROUP: 3724
FILED: OCTOBER 27, 2000
FOR: MILL SAW

#22/
Appeal
Brief
2/4/03
Hant

BRIEF IN SUPPORT OF APPEAL

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Dear Sir:

This is an appeal from the final rejection of claim 6.

REAL PARTY IN INTEREST

The real party in interest is the assignee, Wintersteiger GmbH.

RELATED APPEALS AND INTERFERENCES

The appellants and the appellants' legal representatives know of no other appeals or interferences which will directly affect or be directly affected by, or have a bearing on, the Board's decision in the pending appeal.

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STATUS OF CLAIMS

Claim 6 was finally rejected. Claims 7, 9 and 10 were withdrawn from consideration by the Examiner in Office Actions dated November 7, 2002 and July 15, 2003. Claim 8 is allowed.

SUMMARY OF THE INVENTION

As described in the Substitute Specification, page 1, lines 8-14, and page 8, first 12 lines, and shown in the drawing, the present invention relates to a mill saw comprising a saw frame 3 comprising parallel saw blades 5 cutting only in a stroke direction, a slider-crank drive 4 imparting cutting strokes to the saw frame at a given frequency, and a feed conveyor 6 for feeding stock to be cut by the saw blades in a feed direction, the saw blades being cantilevered in the feed direction, and the saw frame moving at a cutting speed relative to the stock during the cutting strokes. At least one motor 10 separated from slider-crank drive 4 intermittently drives feed conveyor 6 conveying step-by-conveying step during the cutting strokes of saw frame 3 in dependence on the cutting speed.

Favorable cutting conditions are ensured with an accurate motor control to guarantee a long service life of the saw blades

at comparatively high cutting rates (page 3, lines 14-16) by providing a controlling system 12 connected to the at least one motor 10, which controlling system comprises a stored computer control program 13 for the conveying steps adapted to the frequency of the cutting strokes, and a signal transmitter 17 connected to controlling system 12, which signal transmitter transmits an electronic signal indicating a preset position of rotation of slider-crank drive 4 to the controlling system (page 3, penultimate line, to page 5, line 12).

ISSUES

Claim 6 has been rejected under 35 U.S.C. 103(a) as being unpatentable over Wallers (DE 3406455 A1) in view of Sakurai et al '845.

GROUPING OF CLAIMS

Claim 6 is generic. Withdrawn claims 7, 9 and 10 depend on generic claim 6 and define specific features of the signal transmitter (claim 7), an input (claim 9), and specifically two motors (claim 10). These claims will presumably be allowable with allowed claim 6.

ARGUMENT

It is an essential feature of applicants' mill saw that an **electronic** signal indicating a preset position of rotation of the slider-crank drive be transmitted to the controlling system of the motor, as set forth at (f) in claim 6. In describing the Wallers reference, the Examiner has compared the reference's control disk 39 with the claimed "stored computer control program" and the claimed "signal transmitter" to Wallers' shafts 9, 26. Whether or not it may be obvious to "update old mechanical machinery with modern electronics," applicants' signal transmitter 17 is provided to indicate to the motor that a preset position of rotation of the slider-crank drive has been reached. In Walters, only control valve 21 controls the slider-crank drive. This control valve has a rotor fixedly connected to the slider-crank drive. Shafts 9, 26 do not suggest a **signal** transmitter, whether mechanical or electronic, for indicating a preset position of rotation of the slider-crank drive to control valve 21, so that the motor 11 may actuate a conveying step which is independent of the angle of rotation of the slide-crank drive. Thus, the claimed arrangement fundamentally differs from Wallers, even if Wallers were electronically "updated." It is respectfully submitted that Wallers' mechanical control system does **not** perform the same function as applicants' features (e)

and (f).

Waller describes a hydraulic conveyor motor 15, hydraulic fluid being delivered to motor 15 under control of rotating control valve 21 whose control disc 39 is fixedly connected to crank shaft 9 by stub shaft 26 and crank 25 (see Fig. 2). Thus, control disc 39 is rotated in phase with crank shaft 9. The control disc has a control recess 48 (Fig. 4) communicating with return conduit 22 (Fig. 1) so that hydraulic fluid pump 18 is connected to the return conduit while recess 48 is in communication with return conduit 22 and does not deliver hydraulic fluid to motor 15. Thus, conveyance by motor 15 is interrupted during that period. Because of curvature 47 of control recess 48, the opening and closing of return conduit 22 proceeds smoothly, rather than abruptly, so that motor 15 is accelerated and braked smoothly. At any rate, the control of the motor depends on, and is determined by, the position of rotation of crank shaft 9 because control disc 39 is fixedly connected to the crank shaft by stub shaft 26 and crank 25.

As Fig. 1 of Wallers shows, control valve 21 connects pump 18 to motor 15 during the major portion of the rotation of the valve, i.e. except when recess 48 communicates with return conduit 22, during which time the speed of the motor is constant.

During the short period that recess 48 communicates with return conduit 22, the motor is slowly braked and then slowly accelerated again. Thus, feature (d) of claim 6 is also absent from Wallers because motor 15 is operated at a constant speed, except for the short transition periods when it is braked and accelerated, it is not intermittently driven in dependence on the cutting speed. In other words, the structure and operation of applicants' device differ fundamentally from Wallers.

Nor does the Sakurai et al patent suggest the claimed arrangement. Their tachometer generator 41 monitors the speed of the saw blade, as correctly mentioned by the Examiner, which is not suggestive either of Wallers' control valve or his shafts 9, 26. In other words, placing Sakurai et al's tachometer generator into Wallers' system does not produce features (e) and (f) of claim 6. It is not a matter of merely replacing a mechanical by an electronic system, as alleged by the Examiner, but of devising a mill saw in which the control of the motor for intermittently driving the feed conveyor for the stock to be cut is not dependent on the position of rotation of the slider-crank drive because the speed of the slider-crank drive changes little during a single stroke of the saw frame, due to the inertia of the moving mass. Therefore, it is necessary only to provide a stored computer program for the conveying steps adapted to the frequency

of the cutting strokes.

The Sakurai et al patent has been cited by the Examiner in an effort to show it to be obvious "to send an electronic signal to a computer controller, and to use that information to control how the work is fed (33) to the tool."

Sakurai et al's tachometer generator 41 controls the revolving speed of a **bandsaw** blade. The operating conditions of a bandsaw blade cannot be compared with the operating conditions of saw frames comprising parallel saw blades since the stock to be cut is at rest during cutting and only the bandsaw blade is driven. The bandsaw blade is driven at a constant cutting speed while applicants' stock is driven by a motor intermittently operating the feed conveyor. Thus, it is not seen how Sakurai et al's teaching can make applicants' control obvious. Sakurai et al measure the revolving speed of the bandsaw blade and not a preset position of the revolving bandsaw blade. The latter measurement would make no sense in the Sakurai et al apparatus since the cutting conditions are the same in all positions of the revolving bandsaw blade. Thus, while tachometer generator 41 may transmit a signal indicating the speed of the revolving bandsaw blade, it suggests nothing about a signal transmitter transmitting a signal indicating a preset position of rotation of

applicants' crank drive. Therefore, nothing in Sakurai et al makes it obvious to modify Wallers' mechanical control system by the control specifically recited in claim 6. Tachometer generator 41 does not suggest the signal transmitter set forth under (f) and, as pointed out hereinabove, nothing in either cited patent suggests feature (d). The combination of the two patents is not obvious from anything found in either one, and if it were, it would not lead to the claimed invention.

While Sakurai et al contain a "general teaching that sawing machine workfeed (in their case the band saw blade feeding) should be controlled," as stated by the Examiner, it is obvious from the above description that Wallers and Sakurai et al deal with totally different systems and problems so that a modification of Wallers by Sakurai et al was not obvious at the time the present invention was made. In this respect, the Court's decision in **In re Imperato**, 179 USPQ 730, is merely representative of numerous like holdings in stating that

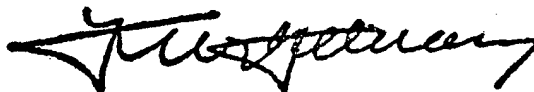
"...the mere fact that those disclosures can be combined does not make the combination obvious unless the art also contains something to suggest the desirability of the combination (emphasis by Court)."

The "general teaching" of Sakurai et al is respectfully submitted **not** "to suggest the desirability of the combination."

While electronic **equivalents** may be ubiquitous, applicants have not provided electronic equivalents but a control system (using electronics) that differs fundamentally from that of Wallers or Sakurai et al.

Appellants accordingly respectfully submit that they are entitled to a patent incorporating claim 6 under 35 U.S.C. 103(a). An Appendix containing the appealed claim, is attached to this brief. Two copies of the brief with Appendix are also attached. Please charge the official fee of \$165.00 (small entity) to Deposit Account No. 03-2468.

Respectfully submitted,
REINHOLD MAYR ET AL



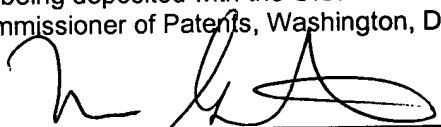
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Appendix

I hereby certify that this correspondence is being deposited with the U.S. Postal Service as first class mail in an envelope addressed to: Assistant Commissioner of Patents, Washington, D.C. 20231, on November 24, 2003.



Maria Guastella

APPENDIX

Claim 6 (appealed) .

A mill saw comprising

- (a) a saw frame comprising parallel saw blades cutting only in a stroke direction,
- (b) a slider-crank drive imparting cutting strokes to the saw frame at a given frequency,
- (c) a feed conveyor for feeding stock to be cut by the saw blades in a feed direction,
 - (1) the saw blades being cantilevered in the feed direction, and
 - (2) the saw frame moving at a cutting speed relative to the stock during the cutting strokes,
- (d) at least one motor separated from the slider-crank drive for intermittently driving the feed conveyor conveying step-by-step during the cutting strokes of the saw frame in dependence on the cutting speed,
- (e) a controlling system connected to the at least one motor, the controlling system comprising
 - (1) a stored computer control program for the conveying steps adapted to the frequency of the cutting strokes, and
- (f) a signal transmitter connected to the controlling system, the signal transmitter transmitting an electronic signal

indicating a preset position of rotation of the slider-crank drive to the controlling system.